

Sonoma County Water Agency

Water Supply Strategies Action Plan

DRAFT
November 2011

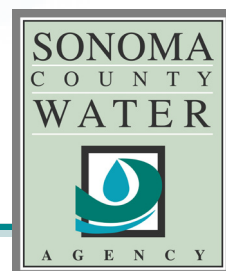


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This plan identifies three levels of action:

Immediate Action: Ongoing or to be initiated within the next year because:

1. Required by regulatory or other deadlines;
2. Other strategies or actions are dependent on outcome;
3. Achievable in the near-term;
4. Funding and resources are available.

Near Term Action: To be initiated within one to three years because:

1. Anticipated, yet not immediate, deadline;
2. Funding is proposed;
3. Necessary for planning and development of long-term actions.

Long-term Action: No defined start date for action, likely longer than three years, because:

1. Not enough information to proceed at this time;
2. Lower priority;
3. Funding not available.

2011 WATER SUPPLY STRATEGIES ACTION PLAN

EXECUTIVE SUMMARY

In September 2010, following a 16-month process of community involvement, the Sonoma County Water Agency Board of Directors approved nine Water Supply Strategies developed to increase water supply system reliability, resiliency and efficiency in the face of limited resources, regulatory constraints and climate change uncertainties.

The Board directed completion of the 2010 Water Supply Strategies Action Plan. The 2010 Plan described how each strategy was being carried out through specific activities and projects, identified involved parties and provided the status and budget information for each activity or project. The Board recognized that the plan is a living document and requested an update in 2011. The Water Agency expects to update its Action Plan annually.

The Water Agency is pleased to report that many activities identified in the 2010 Action Plan were successfully completed. The 2011 Action Plan identifies new activities initiated to support the strategies and also activities that are continuing or have been reprioritized.

As in the 2010 plan, the 2011 Action Plan recognizes the importance of specific stakeholder and general community involvement in successfully carrying out the strategies. Stakeholders that are working with the Water Agency on implementation of a particular action item are specifically mentioned as Involved Parties. Where community involvement is occurring or anticipated during all or part of the process, “community groups” are indicated as Involved Parties. In addition, many Action Plan activities will be reviewed or approved at Water Advisory Committee, Flood Control Zone, Agency Board of Directors and other public meetings. Members of the general public will have the opportunity to review and comment on the activities at all such forums.

Major accomplishments and changes from the 2010 Action Plan are summarized below and in the attached spreadsheet, Attachment A.

Actions Successfully Completed

The last year was marked by two major accomplishments: Completion of the 2010 Urban Water Management Plan (UWMP) and adoption of the Russian River Estuary Lagoon Management Plan EIR and implementation of the Estuary Lagoon Management Plan.

A critical item in the 2010 Action Plan, the 2010 Urban Water Management Plan (UWMP) was completed on time and filed with the State Department of Water Resources. Accordingly, it is not listed in the 2011 Action Plan. The next UWMP will be due in 2015 and work on it will be reflected in future action plans. The 2010 UWMP required both a water demand analysis and coordinated water supply analysis (both also listed in the 2010 Action Plan). The UWMP projected a future need for about 20 percent less water than the amount identified in the 2005 UWMP. Reduced demand means water conservation efforts in the Water Agency’s service area are achieving their goals and new capital projects (and accompanying rate increases) can be delayed.

A second major Action Item from 2010 – Estuary Adaptive Management – was partially completed. The “Environmental Impact Report of the Russian River Estuary Lagoon Management Plan” was approved by the Sonoma County Water Agency Board of Directors in August, 2011. The management plan was also approved. While the approval of the EIR and the plan were major accomplishments, Estuary Adaptive Management remains listed as an Action Item in the 2011 Action Plan because this new adaptive management effort must be implemented and monitored on an ongoing basis. Although a lawsuit was filed challenging the adequacy of the EIR, the new management plan is being implemented.

The Water Agency completed other projects and activities of note over the last year, including:

- **Completed the Grape Creek habitat restoration project.** This project improved coho habitat in a key Dry Creek tributary, as required by the Russian River Biological Opinion. This project restored nearly 2,000 linear feet of Grape Creek habitat, was funded by the Water Agency, constructed by Sotoyome Resource Conservation District and built with the cooperation of landowners. During the first year of monitoring, researchers found juvenile coho in and upstream of restored area. The project requires five years of monitoring, and will remain listed in the 2011 Action Plan.
- **Completed the Dry Creek Bypass Pipeline Feasibility Study.** Meeting a mandate in the Russian River Biological Opinion, the Water Agency and its consultants studied the feasibility of building a pipeline to bypass Dry Creek in order to reduce summertime flows in the creek. A preferred route (primarily following Dry Creek Road) was identified. After some water quality and engineering questions are answered in a follow-up study, the pipeline concept will be set aside until 2018, to be revived if Dry Creek habitat enhancements are unsuccessful.
- **Completed agriculture pilot studies.** These studies, conducted by Dr. Mark Greenspan, educated grape growers on improved water conservation practices for vineyard irrigation and heat suppression.
- **Completed water demand modeling.** This modeling provided an agreed upon, technical basis for the 2010 UWMP.
- **Completed a water supply analysis.** This analysis, required by the Urban Water Management Planning Act, identified regional and local supply, conservation / demand management, and recycled water projects and programs capable of meeting future needs of Water Agency customers.
- **Promoted small-scale Sonoma Valley projects.** A “Slow It, Spread It, Sink It” manual was developed and distributed through efforts of the Sonoma Valley groundwater management program. The manual was distributed at community events, and other water-saving projects were highlighted in an award ceremony and through outreach to the press.
- **Adopted a Water Agency energy policy.** In March, the Water Agency’s board of directors adopted a proactive energy policy. As a result, Strategy Seven (Take Advantage of Energy & Water Synergies) was rewritten and new actions to carry out the strategy were added and 2010 actions were reprioritized.

Significant Progress

Significant progress was achieved for several 2010 Action Plan items, that will continue to be listed in the 2011 Action Plan, including:

- Drafts were completed and released for the Dry Creek Habitat Enhancement Feasibility study. This study will be completed after all comments have been received from National Marine Fisheries Service.
- A \$1.6 million grant was received for the Sonoma Valley County Sanitation District recycled water storage and pipeline project. Construction is underway on a storage pond and a recycled water pipeline. Design is in progress on a recycled water pipeline that will help restore the Napa Salt Marsh.
- The Water Agency and Water Contractors funded the Sonoma-Marin Saving Water Partnership and launched a comprehensive public outreach campaign.
- Environmental analysis and modeling are well underway for the Fish Flow project.
- A \$1 million grant was received for Copeland Creek flood control/groundwater recharge project.
- Progress is ongoing in completing Sonoma Valley groundwater management projects. Monitoring wells were installed, a seepage run study was conducted, groundwater levels are being monitored and public outreach conducted.
- Santa Rosa Plain groundwater management activities continued, with community outreach and ongoing education. At the recommendation of a stakeholder steering committee the Water Agency board directed that a groundwater management plan be initiated. The Water Agency received \$250,000 in grant and state funding to support these valuable groundwater management activities.
- The state-required California Statewide Groundwater Elevation Monitoring program has started in designated basins, with the initial water levels slated to be measured this fall.

- Several hazard and operational reliability projects were funded and initiated, improving the reliability of the Water Agency's facilities. These projects include the earthquake fault crossing mitigation at Rogers Creek, the Russian River and Mark West Creek; liquefaction mitigation for Collectors Three and Five, isolation valve replacement; and installation of flow monitors.
- A new long-term financial model is functional, has been refined and is now being used.

Reprioritization

Several items listed in the 2010 Action Plan have been reprioritized, based on changed conditions, funding opportunities or loss, or other circumstances. Projects falling into this category include:

- **Two Biological Opinion tributary projects.** The Mill Creek fish passage project has been dropped due to key landowner opposition. A fish passage project on Crane Creek has replaced it and is slated for construction in fall 2011. The Wallace Creek fish passage project has been delayed due to right-of-way issues.
- **Dry Creek Agriculture Users Agreement.** Implementing this agreement is now listed as a near-term rather than an immediate action, reflecting the need to prioritize other Dry Creek activities.
- **New focus on natural hazard and operational reliability projects.** Several natural hazard reliability projects were moved into the immediate action category from the near term category so they are in a stronger position to secure FEMA funding. In addition, an emergency response plan for a critical water supply facility, the Mirabel inflatable dam, is being developed and has been added.
- **Revenue modeling.** An alternative revenue model study will begin this winter and is now an immediate action.
- **Water use data.** Water use has dropped dramatically in recent years. Annual collection of information regarding water gross demand, conservation and source of water use is now an immediate action, reflecting the need to better understand trends.
- **Energy items.** The ISO certification process the Water Agency is engaged in is now listed in Strategy Nine, rather than Strategy Seven to better reflect the organizational benefits associated with the ISO process.
- **Farms to Fuel.** A "chicken manure fuel cell project" was mentioned in the 2010 plan, but is now called out as an immediate action item, reflecting success in moving this innovative project forward.

New Actions

Several items were added to the 2011 plan to reflect new Water Agency initiatives, areas of focus or funding opportunities, including:

- **Leak detection study.** Millions of gallons of water could be saved each year by reducing leaks. Using advanced analytics made possible through work with IBM, the Water Agency will engage in a "proof of concept" study to evaluate the possibility of leak detection in the transmission and distribution systems. IBM is providing about \$2 million of funding for this project, and it is listed in the 2011 Action Plan as an immediate action.
- **Engineering & Water Quality Analysis of Dry Creek Pipeline.** The Dry Creek Pipeline Feasibility Study raised questions regarding water quality challenges with getting the water from the pipe into the Russian River or Dry Creek. The Water Agency will begin to evaluate potential water quality issues related to the pipeline outlet facility. This engineering/water quality analysis would begin within three years, and is listed as a new near-term action item.
- **Evaluation of collector wells.** The oldest collector wells have been operating for four decades and must be analyzed to ensure continued performance. If the analysis demonstrates a need, a plan will be developed to increase reliability of these facilities. This action is listed as a new immediate action.
- **Emergency Response Plan.** An up-to-date emergency response plan is critical to the Water Agency's ability to provide water in an earthquake, fire or other emergency. As part of the evaluation needed to

seek ISO certification, the Water Agency recognized it needed to update and better document its emergency response plan. This update is anticipated in 2012 and is listed as an immediate action item in the 2011 Action Plan.

- **New operational reliability projects.** Operational reliability is as important as hazard reliability. Accordingly, projects such as the Cotati Reservoir 3 and the Petaluma Aqueduct cathodic protection have been initiated and are therefore listed as immediate actions.
- **Evaluation of regional and local projects.** When they worked together on their respective 2010 UWMPs, the Water Agency and Water Contractors recognized the need to better coordinate local and regional projects to maximize efficiencies and take advantage of financing opportunities. They have begun work on a process for this coordination and this effort is listed as a new immediate action item.
- **Community Choice Aggregation.** Responding to growing concern about energy costs, future reliability and greenhouse gas emissions, the Water Agency board of directors directed staff to hire a consultant and assess the feasibility of a community-based power exchange, with a focus on renewable energy. Based on the results of the study, the board directed staff to take follow-up steps and report back in six months. This effort is listed as a new immediate action item.
- **Through PWRPA, procure all renewable power produced from Warm Springs Dam hydropower and Sonoma County landfill power facility.** Although the Water Agency produces renewable power at Warm Springs Dam, it sells the power to PWRPA. Sonoma County also sells power produced at its landfill to PWRPA. Although the Water Agency is a PWRPA customer, currently, PWRPA procures all the power from these sources and divides the cost and environmental attributes to PWRPA members. When the Water Agency buys PWRPA power now, the power portfolio includes WAPA hydropower and open market power. If the Water Agency is, instead, able to obtain the “rights” to WSD and Meacham landfill power, rather than sharing it with PWRPA customers, the Water Agency’s efforts to achieve carbon free water will be achieved. This effort is listed as a new immediate action item in the 2011 Action Plan.

For more information, please refer to Attachment A, which summarizes the changes to all 2010 Immediate Actions. The 2011 Update provides additional information and details on all actions. These documents can be found online at www.sonomacountywater.org/water-supply-strategy

Acronyms Used in Plan

Acronyms are used throughout the Water Supply Strategies Action Plan to keep the document as concise as possible.

ACWA	Association of California Water Agencies
AFY	Acre feet per year
AMR	Automated Meter Reading
BOR	Bureau of Reclamation
CASGEM	California Statewide Groundwater Elevation Monitoring
CDFG	California Department of Fish and Game
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CPC	Climate Protection Campaign
CSD	County Sanitation District
CUWCC	California Urban Water Conservation Council
D1610	Decision 1610
DWR	Department of Water Resources
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
GHG	Green House Gas
HMT	Hydrometeorology Test
IRWMP	Integrated Regional Water Management Plan
LBNL	Lawrence Berkeley National Laboratory
MCIWPC	Mendocino County Inland Water and Power Commission
mgd	Million Gallons a Day
MMWD	Marin Municipal Water District

NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NMWD	North Marin Water District
NOAA	National Oceanic and Atmospheric Administration
OES	Office of Emergency Services
PG&E	Pacific Gas & Electric
PRMD	Permit & Resource Management Department
PWRPA	Power and Water Resources Pooling Authority
RCD	Resource Conservation District
RPCA	Regional Climate Protection Authority
SCADA	Supervisory Control and Data Acquisition
SCEIP	Sonoma County Energy Independence Program
SCWA	Sonoma County Water Agency
SVCS	Sonoma Valley County Sanitation District
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
VOM	Valley of the Moon
VOMWD	Valley of the Moon Water District
WAC	Water Advisory Committee
WREGIS	Western Renewable Energy Generation Information System
WSD	Water Smart Development

Water Supply Strategy One

ENSURE ADEQUATE SUMMERTIME WATER FLOW THROUGH DRY CREEK VALLEY

Immediate Action One:

Habitat enhancement, as required by the Biological Opinion, to increase capability of Dry Creek to accommodate summer flows while protecting coho and steelhead.

A. Project: Feasibility study

Conduct detailed geomorphology study to identify possible sites and specific habitat improvement projects.

STATUS: Phase I of study (Historic Analysis) completed in 2010. Water Agency consultant, Inter-Fluve, released Phase II (Draft Feasibility Study) in March, 2011. Study will be finalized when National Marine Fisheries Service (NMFS) and California Department of Fish and Game (CDFG) comments are received. Release of conceptual designs and ranking targeted for fall 2011.

B. Project: Demonstration project

Build first mile of Dry Creek habitat enhancement by 2014.

STATUS: Design is 60% complete. Landowner right of way process is underway. Construction slated for 2012-2014.

Involved Parties (A and B):

- Dry Creek property owners, NMFS, US Army Corps of Engineers (USACE), CDFG, Water Contractors, community groups

C. Project: Development of success measures

Develop criteria for measuring success of Dry Creek habitat enhancement program.

STATUS: Facilitated process to develop and implement specific success criteria is ongoing. Process includes Water Agency, NMFS, USACE and CDFG.

Involved Parties:

- NMFS, USACE, CDFG

Immediate Action Two:

Reduce peak demands that affect Warm Springs Dam releases (also see Strategy 8)

A. Project: New reuse

Potential new reuse projects involving Water Agency include Windsor (Airport Service Area) and Sonoma Valley.

STATUS: Windsor and Water Agency working on feasibility study for recycled water project, with final report anticipated in fall 2011. In Sonoma Valley, Water Agency received Bureau of Reclamation (BOR) and Proposition 84 funding to support design and construction of recycled water storage and pipeline projects. Construction of pipeline and storage facilities initiated summer 2011.

Involved Parties:

- Windsor (in Airport area). In Sonoma, Sonoma Valley County Sanitation District (SVCSD), possibly city of Sonoma and Valley of the Moon Water District (VOMWD), BOR (as part of North Bay Water Reuse Authority), community groups

B. Project: Storage - Groundwater Banking Feasibility Study

Develop Phase 1 regional study and Phase 2 site-specific work plans to implement pilot studies for each Water Contractor.

STATUS: Study is in progress, expected to be completed in 2012.

Involved Parties:

- Cotati, Rohnert Park, Windsor, Sonoma, VOMWD, community groups

C. Project: Retrofit/conservation

- High Efficiency Fixture direct install program
- AB715 and SB407 mandate high efficiency toilets and fixture retrofit on resale
- Water management grant funding tied to water conservation Best Management Practices
- Implementation of regional programs through the Sonoma Marin Saving Water Partnership
- Implementation of regional programs that target outdoor water use
- Encourage water use efficiency through outreach and education

STATUS: Sonoma Marin Saving Water Partnership was funded and launched (with logo and website) in 2010/11. An outreach campaign featuring people who've saved water ran prominent ads in local papers; two tours of water-saving gardens were held. Bay Area IRWMP Proposition 84 grant (\$725,000) received for direct installation programs in NMWD, Petaluma, SVCSD and possibly the city of Sonoma and VOMWD.

Involved Parties:

- For state-mandated efforts and implementation of the Saving Water Partnership, all Water Contractors, community groups. For direct install program, NMWD, SVCSD and possibly city of Sonoma and VOMWD

D: Project: Leak detection *NEW!*

Conduct research study regarding use of advanced analytics in combination with flow and pressure data to evaluate potential for leak detection on transmission and distribution systems.

STATUS: Project initiated July 2011, expected completion in 2012.

Involved Parties:

- VOMWD and IBM

Immediate Action Three:

Implement Dry Creek tributary restoration projects, as required by Biological Opinion, with goal of enhancing coho and steelhead habitat.

A. Project: Grape Creek Restoration Project monitoring

STATUS: Construction complete. First year monitoring occurred summer 2011, with juvenile coho found upstream of and in restored areas. Ongoing monitoring for four more years.

B. Project: Grape and Wallace Creek fish passage projects

STATUS: Design is 50 % complete for Grape Creek project. Design for Wallace Creek project is complete. Right-of-way issues have delayed construction.

C. Project: Crane Creek Restoration Project

STATUS: Sotoyome Resource Conservation District (Sotoyome RCD) is managing project; construction underway.

Involved Parties (A, B, and C):

- Private landowners, Sotoyome RCD, Sonoma County DTPW, NMFS, CDFG, community groups

Immediate Action Four:

Identify and secure federal, state, and grant funding for implementation of the Biological Opinion.

A. Project: Seek federal and state funding

Water Agency representatives in Washington, D.C. and Sacramento are responsible for pursuing funding for studies and projects required by the Biological Opinion.

STATUS: Funding received for design of fish screen/ladder/viewing gallery as part of state grant process. Federal activities have been focused on Corps authority and funding for Dry Creek habitat enhancement projects. USACE received authorization and funding for enhancements immediately below WSD.

Involved Parties:

- NMFS, USACE, CDFG, Water Contractors, community groups

B. Project: Proactively work with Water Contractors to ensure their timely assistance in funding efforts and report activities at WAC meetings.

STATUS: Ongoing

Involved Parties:

- Water Contractors

Near Term Action One:

Construct second and third miles of Dry Creek habitat enhancement, per Biological Opinion.

A. Project: Habitat enhancement

STATUS: To be completed by October 2017, and monitored to evaluate performance.

Involved Parties:

- Dry Creek property owners, NMFS, USACE, CDFG

Near Term Action Two:

Develop contingency plan for funding and construction of Dry Creek bypass pipeline if, contrary to expectations, habitat enhancement efforts fail.

A. Project: Bypass pipeline contingency planning

STATUS: To be determined during budget discussions after completion of habitat enhancement studies and pipeline feasibility study.

Involved Parties:

- NMFS, USACE, CDFG, Water Contractors

Near Term Action Three: *NEW!*

Conduct engineering and water quality analysis for Dry Creek bypass pipeline.

A. Project: Conduct bypass pipeline engineering and water quality analysis

STATUS: Study to develop and implement a plan to conduct sedimentation sampling at potential outlet sites, if pipeline construction is necessary, will be conducted within three years.

Involved Parties:

- NMFS, USACE, CDFG, Water Contractors

Long Term Action One:

Construct fourth, fifth and sixth miles of Dry Creek habitat enhancement, per Biological Opinion.

A. Project: Habitat enhancement

STATUS: To be completed by 2021 if first three miles restored and found successful by NMFS/CDFG in 2018.

Involved Parties:

- Dry Creek property owners, NMFS, USACE, CDFG, community groups

Long Term Action Two:

If habitat enhancement efforts are unsuccessful, build Dry Creek bypass pipeline.

A. Project: Conduct necessary financial and environmental studies and identify timing of projects

STATUS: To be determined.

B. Project: Construct bypass pipeline

STATUS: To be determined.

Involved Parties (A and B):

- NMFS, USACE, CDFG, Water Contractors, community groups

Water Supply Strategy Two

IMPROVE MANAGEMENT OF RUSSIAN RIVER SYSTEM TO PROTECT FISHERIES AND MEET WATER DEMANDS

Immediate Action One:

Modify Decision 1610 minimum instream flow requirements as required by Biological Opinion and make technical adjustments to existing water rights.

A. Project: D1610 changes

Petition for changes to D1610 instream flow requirements, as required by Biological Opinion, and develop petitions for water rights technical adjustments.

STATUS: State Water Resources Control Board (SWRCB) noticed Water Agency's 2009 petition, with comment period closing in May 2010. Water Agency received 384 protests to the petition. Negotiations are ongoing, but protests are not expected to be resolved until after release of Final EIR.

Involved Parties:

- SWRCB, Water Contractors, USACE, NMFS, CDFG, community groups

B. Project: Modeling and development of new hydrologic index

Conduct modeling for Fish Flow Project EIR using new ResSim model, updated demand profile, and Biological Opinion-specified summer flows. Develop new hydrologic index in conjunction with the USACE's Hydrologic Engineering Center (HEC) and the Hydrologic Index Technical Advisory Group (HITAG), comprised of representatives from state and federal agencies.

STATUS: (1) Preliminary modeling has been completed for Fish Flow project using current D1610 hydrologic index. New hydrologic index and flow modeling is in progress. Climate change modeling scheduled for 2012.

Involved Parties:

- USGS, NOAA, USACE, DWR

C. Project: Fish Flow Project Environmental Impact Report (EIR)

Prepare EIR for modified D1610 minimum instream flow requirements and technical water rights Adjustments, including new hydrologic index.

STATUS: Certified EIR must be completed by 2013 per Biological Opinion. Notice of preparation was released in September 2010. Draft EIR to be released summer 2012.

Involved Parties:

- Water Contractors, SWRCB, USACE, NMFS, CDFG, community groups

D. Project: Submit annual interim change petitions

STATUS: As per Biological Opinion, the Water Agency submitted petitions to SWRCB in 2010 and 2011; both were approved and subsequent orders implemented. The Water Agency plans to submit a petition to the SWRCB in 2012.

Involved Parties:

- SWRCB, Water Contractors, NMFS, CDFG, Russian River water users, community groups

Immediate Action Two:

A. Project: Estuary Adaptive Management

Biological Opinion requires modification of the Water Agency's Russian River estuary program, including managing the estuary as a summer lagoon between May 15 and October 15, and breaching the sandbar that closes the mouth of river as needed the remainder of the year.

STATUS: Final EIR approved August 2011. Lawsuit challenging adequacy of EIR filed in September.

Involved Parties:

- NMFS, CDFG, community groups

Immediate Action Three:

Work with interested parties to form an independent science review panel to evaluate existing data and develop a conceptual model regarding the hydrologic system upstream of the confluence of Dry Creek and the Russian River

A. Project: Formation of science panel

Participate in the formation of an interdisciplinary, independent science review panel for the upper Russian River system. Purpose of panel is to describe how system (groundwater, surface water) works and identify data gaps.

STATUS: Planning activities are ongoing.

Involved Parties:

- Grape growers and other stakeholder and community groups.

Immediate Action Four:

Support enhanced weather forecasting for frost protection and irrigation by agriculture.

A. Project: Funding

Provide funding to Winegrape Commission for forecasting service based on network of weather stations installed by property owners. Improved forecasting will benefit Water Agency operations and agriculture water management (linked to Strategy 9, Collaborative Platform). (Coordinate with Strategy 3, Immediate Action 2 if possible.)

STATUS: Project being implemented. Forecasting services are ongoing.

Involved Parties:

- Grape growers and Sonoma County Winegrape Commission, Water Contractors

Immediate Action Five:

Enhance operations at Lake Mendocino to increase water supply.

A. Project: Corps operations

Enter into Memorandum of Agreement (MOA) with USACE to evaluate potential options for modified reservoir operations.

STATUS: Water Agency and USACE entered into a MOA to evaluate reoperation of Coyote Valley Dam to provide improved water supply reliability. USACE has prepared a draft scope of work for Water Agency review. USACE is scheduled to start analysis in Fall 2011.

Involved Parties:

- USACE, plus NOAA and National Weather Service for data collection and modeling

B. Project: Local users

Develop comprehensive water use agreement with Mendocino County water districts.

STATUS: Discussion ongoing.

Involved Parties:

- Mendocino County Russian River water users, SWRCB, community groups

Immediate Action Six:

Prepare reports on Water Agency's water rights.

A. Project: Reports

Prepare annual water rights reports, detailing total water use including local supplies and recycled water for offset of Russian River supplies.

STATUS: The Water Agency submitted its annual water rights progress and licensee reports for Water Year 2010 to the SWRCB on July 1, 2011.

Involved Parties:

Water Contractors, SWRCB, other Russian River water users under contract to the Water Agency

■ Immediate Action Seven:

A. Project: Continue to monitor FERC Final Order and FERC Modeling/NEPA

Support Mendocino County Inland Water and Power Commission's (MCIWPC) request that Federal Energy Regulatory Commission (FERC) obtain information from PG&E regarding unintended water supply impacts of FERC Potter Valley Hydroelectric Project (PVP) Final Order.

STATUS: PG&E provided FERC with detailed information regarding the water supply impacts of FERC's Final Order by letter dated September 3, 2010. To date, FERC has taken no action to respond to this information.

Involved Parties:

FERC, PG&E, NMFS, MCIWPC, Round Valley Tribes, Water Contractors, Russian River water users, community groups

Near Term Action One:

Implement studies, monitoring, and modeling activities to evaluate surface water and groundwater conditions in Mendocino, Alexander Valley and Upper Russian River Valley to ensure reliable river management under new flow conditions, as specified by Biological Opinion.

A. Project: Work plan

Implement technical work need for studies, monitoring and modeling activities described above.

STATUS: Depends on outcome of science panel (Immediate Action 3) and recommended monitoring and study programs.

Involved Parties:

- Grape growers, Water Contractors, SWRCB, NOAA, other Russian River water users, community groups

Near Term Action Two:

A. Project: Prepare for Potter Valley Project re-licensing proceeding

PG&E's FERC license will expire in April 2022. The relicensing process will likely begin in the next several years. The Water Agency and its customers must prepare to participate in the relicensing to ensure their interests and those of the Russian River system are incorporated into future operation of the project.

STATUS: To be determined.

Involved Parties:

- FERC, PG&E, NMFS, Round Valley Tribes, Water Contractors, Russian River water users, community groups

Near Term Action Three:

Implement water management in Dry Creek per agreement with Dry Creek property owners.

A. Project: Variety of Actions

Implement actions related to water management programs, studies, and monitoring activities specified in Dry Creek water management agreement.

STATUS: Awaiting land owner sign ups from Dry Creek Agricultural Water Users, Inc. Also need federal approval. Project moved from Immediate to Near Term. Focus has shifted to Dry Creek activities required by the Biological Opinion.

Involved Parties:

- Dry Creek Agricultural Water Users, Inc., Secretary of Army

Water Supply Strategy Three

PLAN FOR THE IMPACT OF CLIMATE CHANGE ON WATER SUPPLY & FLOOD PROTECTION

Immediate Action One:

Initiate climate change modeling for Russian River and Sonoma Valley watersheds.

A. Project: Develop Model

Develop predictive model for Sonoma Valley and Russian River watersheds that downscales large climate models to local watershed scale. Model will consider effects of fog and provide hydrology input to Water Agency's model (ResSim) and to Sonoma Valley and Santa Rosa Plain groundwater models.

STATUS: Underway. To be completed in Winter 2012.

Involved Parties:

- U.S. Geological Survey (USGS)

Immediate Action Two:

Support development of Hydrometeorology Test bed (HMT) for the Russian River basin.

A. Project: Support federal partners

Support federal agencies in installing additional weather sensors to provide more accurate forecasting. Sensors would enhance existing radar systems and increase capabilities for linking rainfall predictions and hydrology. (Coordinate with Strategy 2, Immediate Action 4, if possible, by including locally owned weather stations into the HMT program.)

STATUS: NOAA and the Water Agency are developing an agreement for pilot program with NOAA leading effort to secure pilot project funds in 2012 federal funding cycle.

Involved Parties:

- NOAA, USACE, USGS, National Weather Service

Near Term Action One:

Develop Adaptation Measures

A. Project: Develop reliability actions

Once climate change predictive modeling is complete, develop actions to increase reliability of water supply, reservoir and river management, conjunctive use, and saline water management.

STATUS: To be determined.

Involved Parties:

- USACE, Regional Climate Protection Authority, Water Contractors, community groups

Long Term Action One:

Update climate change analysis.

A. Project: To be determined

Based on advances in scientific understanding of climate processes and predictive modeling.

Involved Parties:

- USGS

Water Supply Strategy Four

IDENTIFY AND IMPLEMENT PROJECTS THAT CAPTURE STORMWATER FOR WATER SUPPLY USES

Immediate Action One:

Identify projects within Water Agency Flood Control Zones that reduce flooding and increase groundwater recharge.

A. Project: Roadmapping

Conduct feasibility study for flood control/water supply projects for Zones 1A, 2A, and 3A.

STATUS: Draft Scoping Studies released. Initial stakeholder meetings held in Sonoma Creek, Petaluma River, and Laguna Mark-West watersheds. Project concepts are in development. Scoping Studies will be completed in 2011/12 and Feasibility Studies prepared for top ranked project concepts in each watershed.

Involved Parties:

- Flood Zone advisory committees, Sonoma County Agricultural Preservation and Open Space District (Open Space District), resource conservation districts (RCD), cities in Zones 1A, 2A, and 3A, Sonoma Land Trust, agricultural organizations, property owners, community groups

B. Project: Seek funding

Apply for state, federal, and private grants to fund studies and potential projects.

STATUS: Received \$1 million from Proposition 84 funds for Copeland Creek project. Applied for Proposition 1E funding.

Involved Parties:

- North Bay Watershed Association, SF Bay IRWMP, North Coast IRWMP, Sonoma Ecology Center, Southern Sonoma RCD, other community groups

Near Term Action One:

Initiate efforts to obtain property rights for project sites identified in immediate actions. Obtain funding for such projects.

A. Project implementation

Implement projects identified in feasibility study described above.

STATUS: To be initiated once study is completed and funding identified.

Involved Parties:

- Property owners, resource conservation districts, cities, community groups

Long Term Action One:

Design and construct multipurpose stormwater detention facilities.

A. Project:

Specific projects will be constructed dependent on completion of above steps.

Involved Parties:

- Property owners, resource conservation districts, cities, Flood Zone committees, community groups

Water Supply Strategy Five

BUILD PARTNERSHIPS WITH STAKEHOLDERS TO FACILITATE INFORMATION-BASED WATER SUPPLY PLANNING

Immediate Action One:

Develop non-regulatory AB 3030/SB1938 management plans that emphasize local control. Emphasize development of diversified water supply “portfolios” for each contractor. Continue with Sonoma Valley program and initiate program in Santa Rosa Plain.

A. Project: Sonoma Valley

Implement Sonoma Valley groundwater management plan.

STATUS: In progress. Activities undertaken in 2010/11 include conservation, installation of monitoring wells, mapping recharge areas, seepage run studies of Sonoma Creek, groundwater level monitoring and public outreach.

Involved Parties:

- Basin Advisory Panel, private well owners, community groups, City of Sonoma, Valley of the Moon Water District, other water purveyors

B. Project: Santa Rosa Plain

Continue planning Santa Rosa Plain groundwater management.

STATUS: Stakeholder steering committee completed its activities and unanimously recommended proceeding with an AB 3030/1938 management plan. Per direction from its Board of Directors, Water Agency staff will develop management plan and agreement with local partners to fund plan development.

Involved Parties:

- Private well owners, community groups, cities, Water Contractors, other water purveyors

Immediate Action Two:

Pursue funding opportunities enhanced by developed management plans. Ranking for state funding enhanced if groundwater management plans are in place.

A. Project: Funding

STATUS: Ongoing effort. Sonoma Valley has received three grants to date, in addition to direct DWR funding and technical support. The SVCSD recently obtained Proposition 84 funding for a salt and nutrient management planning study. Santa Rosa Plain stakeholder process has received state funding for facilitator services in addition to a Proposition 84 grant to fund development of a groundwater plan. Santa Rosa Plain groundwater management process is included in North Coast IRWMP.

Involved Parties:

- State agencies, legislators, North Coast and San Francisco Bay IRWMP

Immediate Action Three:

Work with interested parties to form an independent science review panel to evaluate existing data and develop a conceptual model regarding the hydrologic system upstream of the confluence of Dry Creek and the Russian River

A. Project: Formation of science panel

See Strategy 2, Immediate Action 3, Formation of Science Panel

Involved Parties:

- Grape growers, community groups

Immediate Action Four:

- **Ensure Water Agency and Sonoma County compliance with the California Statewide Groundwater Elevation Monitoring (CASGEM) program.**

A. Project: Preliminary activities - program development

Implement first year of required monitoring for 13 designated basins in county's 14 basins. (The Water Agency is responsible for two basins and through an agreement with the County is monitoring the 11 basins under the County's responsibility. The City of Petaluma is responsible for the Petaluma Valley basin.)

STATUS: The Water Agency is working with the RCDs and others to conduct outreach and develop a monitoring program for the 13 county basins. Monitoring plans for each basin are anticipated to be submitted to DWR in September-October 2011. The initial water levels will be collected in Fall 2011. This will be an ongoing activity.

Involved Parties:

- Sonoma County, cities, Resource Conservation Districts, community groups

Near Term Action One:

Implement water management in Dry Creek per agreement with Dry Creek property owners.

A. Project: Variety of Actions (See strategy 2, Near Term Action 3)

Water Supply Strategy Six

IMPLEMENT PROJECTS TO IMPROVE TRANSMISSION SYSTEM RELIABILITY

Immediate Action One:

In consultation with Water Contractors, develop plan to provide consistent funding for natural hazard and operational reliability capital projects.

Projects with full or partial funding in 2011/12:

A. Project: Rodgers Creek Fault crossing mitigation

STATUS: FEMA obligated funds in October 2010 and project design was initiated. In FY 2011/12, anticipate completing design and starting construction.

B. Project: Collector 3 and 5 liquefaction mitigation

STATUS: In FY 2010/11 engaged consultant to conduct feasibility study to evaluate potential project alternatives. Completed geotechnical field investigations and submitted Letter of Intent to apply for FEMA funding in October. In FY 2011/12, feasibility study should be complete and Water Agency will apply for FEMA funding.

C. Project: Isolation valves

STATUS: In FY 10/11, anticipated FEMA initiation of NEPA review did not occur, but project scope was further developed. Currently, project scope is being finalized and is awaiting FEMA initiation of NEPA review. In 2011/12 Water Agency will support NEPA review, as needed.

D. Project: Flow monitoring *NEW!*

STATUS: Phase One (three base stations and installation of 150 transmitters) will be completed in December 2011. Phase Two (three base stations and 30 additional transmitters) will be completed by July 2012.

E. Project: Russian River crossing *NEW!*

STATUS: In FY 2010/11, anticipated FEMA initiation of NEPA review did not occur, but consultant was engaged to further develop project approach. Geotechnical field investigations recently completed. In FY 2011/12, project approach will be finalized; FEMA will initiate NEPA review; Water Agency will support NEPA review, as needed.

F. Project: River Diversion System liquefaction mitigation *NEW!*

STATUS: In FY 2010/11, engaged consultant to conduct feasibility study to evaluate potential project alternatives. Feasibility study to be completed in FY 2011/12

G. Project: Mark West Creek crossing *NEW!*

STATUS: FEMA funding application submitted in FY 2010/11 and Water Agency received notice of preliminary selection for funding. In FY 2011/12 project scope will be further developed; anticipate FEMA will initiate NEPA review; NEPA review will be supported by Water Agency, as needed.

H. Project: Collector 6 liquefaction mitigation *NEW!*

STATUS: Consultant was engaged to conduct feasibility study to evaluate potential project alternatives in FY 2010/11. Feasibility study will be completed in 2011/12.

I. Project: Mirabel Dam Emergency Response Plan (See Immediate Action 8, below)

■ **J. Project: Cotati Reservoir 3 recoat *NEW!***

STATUS: Assessment and design planned for 2011/12.

K. Project: Petaluma Aqueduct cathodic protection upgrade *NEW!*

STATUS: Currently in design phase.

Projects that are not currently funded:

A. Project: Emergency Wells

B. Project: Kawana to Sonoma Booster Station pipeline

C. Project: Upgrade Sonoma Booster Pump Station

D. Project: Upgrade Ely Booster Pump Station

E. Project: Bennett Valley Fault crossing (Sonoma Aqueduct)

F. Project: Petaluma River crossing (Petaluma Aqueduct)

G. Project: Sonoma Creek crossing (Lawndale/Madrone)

H. Project: Sonoma Creek crossing (Verano Ave)

I. Project: Calabazas Creek crossing

J. Project: Kastania Reservoir recoat

STATUS:

- Green Projects: At least partially funded in FY 2011/2012
- Blue Projects: Have not been funded

Involved Parties Green/Blue Projects: Varies according to project

Immediate Action Two:

Continue to pursue state and federal funding for natural hazard reliability projects.

A. Project: Seek Funding

Advocate for funding in Sacramento and Washington, D.C. Effort will be enhanced with regional implementation plan that demonstrates local stakeholder commitment.

STATUS: Ongoing.

Involved Parties:

- Water Contractors, state/federal agencies, community groups

Immediate Action Three:

Work with Water Contractors to reduce peak demand on transmission system via conservation, groundwater banking, local supply, and recycled water.

A. Project:

See Strategies 1, 4, 5, 8 and 9.

Involved Parties:

- Water Contractors, community groups

Immediate Action Four:

Continue research on natural filtration capacity of Russian River alluvial materials.

A. Project: Research on pathogen removal

Continue applied research partnership with USGS to evaluate pathogen removal mechanisms by alluvial materials.

STATUS: Ongoing. Published results of most recent research in "Environmental Science and

Technology”.

Involved Parties:

- Water Contractors, USGS, California Department of Public Health (CDPH), U.S. Environmental Protection Agency (EPA)

B. Project: Research on surface water/groundwater interaction

Continue studies and modeling of surface water/groundwater interactions in collaboration with Lawrence Berkeley National Laboratory (LBNL) to better understand flow mechanics of Water Agency facilities as they relate to production and water quality.

STATUS: Ongoing. Recent work presented at Geologic Society of America Conference and in published proceedings.

Involved Parties:

- Water Contractors, LBNL, CDPH, EPA

Immediate Action Five:

Continue planning new transmission system projects to increase reliability of existing system.

A. Project: Planning

Develop scope, cost, energy requests, and schedule of transmission system projects required to meet the Water Agency’s portion of projected demands through the Urban Water Management planning horizon. Projects identified using Water Agency’s transmission system hydraulic model.

STATUS: Ongoing activity.

Involved Parties:

- Water Contractors

Immediate Action Six:

Evaluate condition of Water Agency’s transmission system, especially portions experiencing elevated velocities.

A. Project: Study – Petaluma Aqueduct

Evaluate operational condition of southern portion of Petaluma Aqueduct potentially employing emerging technologies. If successful, approach could be employed on other segments of transmission system that experience high velocities and pressures.

STATUS: Project will be initiated in FY 11/12

Involved Parties:

- Water Contractors

B. Project: Leak detection (See Strategy 1, Immediate Action 2, Project D) NEW!

Immediate Action Seven:

Five year update and renewal of Local Hazard Mitigation Plan

A. Project: Update Local Hazard Mitigation Plan

STATUS: In FY 2010/11 selected consultants to update plan and develop project concepts for future grant applications. Next step is to prepare and execute agreements with consultants.

Commencement of LHMP update and project development tasks anticipated for FY 2011/12.

Involved Parties:

- Water Contractors, County of Sonoma

Immediate Action Eight:

Create Mirabel Dam emergency response plan for dam failure or damage

A. Project: Prepare contingency plan

Develop short-term emergency response and long-term replacement plan for inflatable dam.

STATUS: Funding for project is budgeted in FY 2011/12.

Involved Parties:

- Water Contractors

Immediate Action Nine:**Increase emergency preparedness and response****A. Project: Update emergency response plan**

Revise and update the Water Agency's planned response to floods, earthquakes, and other disasters to reflect changes in facilities, responsibilities, and supporting documents. Implement annual review and revision process.

STATUS: Updates are 50 percent complete. Final plan revisions anticipated in Winter 2012

Involved Parties:

- Internal Water Agency activity

B. Project: Increase emergency preparedness drills and exercises to improve readiness

Schedule and perform an increased number of emergency drills and exercises internally and in collaboration with Water Contractors and other local agencies to improve response and recovery activities and to identify areas of improvements to Emergency Response Plan.

STATUS: Collaborative and internal exercises are scheduled during FY11/12. Increased collaborative exercises anticipated in FY12/13

Involved Parties:

- Internal Water Agency activity
- Water Contractors and other local agencies

Near Term Action One:**Evaluate performance of collector wells****A. Project: Evaluate Collector Wells 1 and 2**

Analyze operational performance of Water Agency's oldest collector wells and, if needed, develop a plan to increase reliability of these facilities.

Involved Parties:

- Water Contractors

Long Term Action One:**Develop emergency response capabilities for collaboration platform (Strategy 9).**

STATUS: To be determined

Water Supply Strategy Seven

IMPROVE THE ENERGY EFFICIENCY OF THE WATER TRANSMISSION SYSTEM AND INCREASE RENEWABLE POWER USE

Immediate Action One: *NEW!*



Implement Water Agency's energy policy, including achieving "Carbon Free Water"

A. Project: Develop and implement Water Agency renewable energy generation projects

1. Implement Farms to Fuels project.

STATUS: In development.

Involved Parties:

- Private developer OHR Biostar, LLC, PG&E, PWRPA, community groups

2. Obtain rights to Warm Springs Dam hydropower and Sonoma County Landfill power facility

STATUS: In development. Warm Springs Dam hydro power is now retained through PWRPA for Water Agency use.

Involved Parties:

- PWRPA, Sonoma County Public Works Integrated Waste Division

3. Explore other locally available renewable energy potential including solar, wind, wave, geo-thermal, solid waste, pyrolysis and biomass.

STATUS: Ongoing.

Involved Parties:

- PWRPA, North Coast IRWMP, PRMD, Agricultural Preservation and Open Space District, community groups

B. Project: Develop and implement Water Agency energy efficiency projects

IBM collaborative platform/leak detection (See Strategy 9, Immediate Action 1)

STATUS: Ongoing

Involved Parties:

- IBM, Water Contractors

Immediate Action Two: *NEW!*

Implement Water Agency's Energy Policy regarding development of programs and projects of regional benefit

A. Project: Develop and participate in projects of regional benefit

1. Conduct feasibility study of Community Choice Aggregation (CCA) in Sonoma County and work with partners, such as the County of Sonoma and other local jurisdictions.

STATUS: In development. Completed fall 2011.

Involved Parties:

- Water Agency, RCPA, County of Sonoma, local municipalities, other public and private entities and organizations, community groups

2. Implement Renewable Energy Secure Communities (RESCO) project to develop renewable energy portfolio for Sonoma County, including piloting organic waste digestion combined heat and power (CHP), wind, geothermal heat pumps using recycled water, and electric vehicle charging stations to run on renewables.

STATUS: In development. Expected completion 2013.

Involved Parties:

- RCPA, CPC, Los Alamos National Laboratory (LANL), Local Power Inc., community groups

3. Assist interested Water Contractors in becoming PWRPA members to obtain less expensive renewable power.

STATUS: In development

Involved Parties:

- Water Contractors, PWRPA

B. Project: Emissions Reporting

Voluntarily report carbon emissions to The Climate Registry to verify carbon free status.

STATUS: Ongoing.

Involved Parties:

- Internal Activity, The Climate Registry

C. Project: Register Renewable Energy Credits with Western Renewable Energy

Generation Information System (WREGIS)

STATUS: Ongoing

Involved Parties:

- SCWA, WREGIS

D. Project: Solar

Develop Sonoma County Airport project.

STATUS: Airport project in development. CEQA underway. Working with private developers to finance, design, build, own, operate and maintain a PV facility.

Involved Parties:

- Water Agency, PG&E, PWRPA, Sonoma County Charles Schulz Airport, private solar developer TBD

Immediate Action Three:

Pursue state and federal funding for energy efficiency and renewable energy projects.

A. Project: Implement projects funded by State and federal grants

Implement projects funded from the following grants:

- CEC Public Interest Energy Research (PIER) grant for RESCO project (\$1.0 million, April 2011)
- CEC Transportation Fuel grant to supplement Farms to Fuels project (\$3.3 million, June 2011)
- CEC Energy and Water Use Efficiency Grant for Collector No. 6 (\$50,000, March 2011)
- CEC State Energy Program (SEP) Municipal Energy Financing Program for North Coast Property Assessed Clean Energy (PACE) programs (\$2.5 million, February 2010)
- Metropolitan Transportation Commission (MTC) grant from the federal Surface Transportation Program (STP) for the Local Government EV Project (\$2.8 million, November 2010)

STATUS: While many grants have been received, the funded projects must be completed and the Water Agency continues to pursue grant funding.

Involved Parties:

- Los Alamos National Laboratory (LANL), Climate Protection Campaign, Regional Climate Protection Authority, Local Power Inc., BioStar Systems, LLC, Sonoma County Transit, Metropolitan Water District of Southern California, County of Sonoma, Sonoma County Transportation Authority, North Coast Energy Services, Inc., Alameda County, community groups

Water Supply Strategy Eight

IMPLEMENT PROJECTS THAT IMPROVE INTEGRATION OF WATER MANAGEMENT

Immediate Action One:

Conduct long-term financial analysis to support evaluation and development of water supply, conservation, demand management, and recycled water projects and programs.

A. Project: Financial planning

Use rate model to evaluate cost-benefit and feasibility of alternative Water Agency projects

STATUS: Model has been refined, is functional and is being used to support ongoing planning activities with Water Contractors. The model evaluates wholesale Water Agency rates (not retail rates of Water Contractors)

Involved Parties:

- Water Contractors

Immediate Action Two:

Develop countywide guidance manual and support the development of individual Water Smart Development (WSD) standards by each land use jurisdiction in Sonoma County, with the goal of managing stormwater quantity and quality and reducing potable water required by new development. Guidance manual will also partially address requirements of stormwater permit jointly held by Water Agency, Sonoma County, and Santa Rosa.

A. Project: Countywide manual

Complete countywide manual with a comprehensive water balance approach that includes three primary WSD components: conservation, reuse and stormwater management.

STATUS: Draft countywide guidance manual circulated for review by stakeholders and comments received. Final version current being drafted with manual expected to be complete winter 2012

B. Project: Local jurisdiction plans

Support the development, as requested, by local land use jurisdictions that specify goals for reduced potable water requirements via WSD measures for new development (consistent with local policies and programs).

STATUS: Outreach with Sonoma County land use planning entities initiated.

Involved Parties (A and B):

- PRMD, Regional Climate Protection Authority, Sonoma County cities, building community, North Coast Regional Water Quality Control Board, SWRCB, community groups

Immediate Action Three:

Consult with Water Contractors to evaluate feasibility of base demand system instead of continued peak summer demand system.

A. Project: Assess feasibility

Specific project will depend on outcome of implementation of peak reduction measures (Strategy 1, Immediate Action 2) such as conservation, reuse, local supplies and groundwater banking. Financial implications of base demand system will be evaluated as part of long-term financial modeling (Immediate Action 2) and rate study (Immediate Action 4).

STATUS: Ongoing discussion with Water Contractors as part of the Urban Water Management and financial planning processes.

Involved Parties:

- Water Contractors

Immediate Action Four:

Evaluate alternative revenue models such as seasonal rates and fixed versus variable costs.

A. Project: Evaluate seasonal rates and rate

STATUS: A rate study is anticipated to start in fall/winter 2011/12.

Involved Parties:

- Water Contractors

Immediate Action Five:

Compare actual gross demand, conservation, and source of water use (per the information completed by Immediate Action 8 Strategy 2) with the UWMP projection to ensure projections represent actual conditions.

A. Project: Data comparison.

STATUS: Will be an ongoing process starting with Water Year 2011/2012.

Involved Parties:

- Water Contractors, land use planning entities

Immediate Action Six: *NEW!*

Work with water contractors to evaluate local and sub-regional projects that could be combined with regional Water Agency projects to increase overall water supply reliability in the most cost-effective manner.

A. Project: Conduct assessment of local and sub-regional projects in conjunction with Water Agency projects

STATUS: To be initiated in 2011/12. This is anticipated to be an ongoing water supply planning process.

Involved Parties:

- Water Contractors

Near Term Action One:

Negotiate and develop new Restructured Agreement for water supply to reflect current conditions and identify future transmission system improvements.

A. Project: Identify changes

Development of term sheet for proposed changes to Restructured Agreement for Water Supply to better reflect current and anticipated future conditions.

STATUS: To be determined.

Involved Parties:

- Water Contractors, community groups

B. Project: Negotiate new agreement

STATUS: To be determined.

Involved Parties:

- Water Contractors, community groups

Water Supply Strategy Nine

IMPROVE INTERNAL AND EXTERNAL PROCESSES, DATA EXCHANGE AND ANALYSIS
TO PROMOTE ORGANIZATIONAL EFFICIENCY

Immediate Action One:

Develop data management system “Collaboration Platform” in partnership with IBM that provides operational data of Water Agency’s water supply and transmission system in addition to Water Contractors’ systems.

A. Project: Demonstration project - collaboration platform

Initial pilot project will integrate monitoring capabilities of SCADA systems for Cotati, Santa Rosa, Rohnert Park and Water Agency to improve communications, increase water and power efficiencies. The platform will also integrate monitoring data from other resource agencies, including USGS, NOAA Weather Service and USACE.

STATUS: Nearing completion of start-up phase. Planned tasks for FY 2011/12 include integrating into the platform: (1) SCADA information from two additional Water Contractors; (2) Phase one of automated metering; and (3) improved display capabilities.

B. Project: Metering

Automated meter reading (AMR) capability integrated with IBM data management system will reduce costs, improve operations (especially in summer), and increase water efficiency.

STATUS: The first phase will be completed in fall 2011, resulting in real-time metering of approximately 120 turnouts that provide Water Agency water to Santa Rosa, Rohnert Park, and Cotati and Valley of the Moon Water District (about two-thirds of the system)

C. Project: Integrated weather forecasting

Integrate weather forecasting and weather station data (Strategy 3) into data management system.

STATUS: Part of pilot project design.

Involved Parties (A, B, and C):

- Water Contractors

Immediate Action Two:

Extend demonstration project including AMR to other Water Contractors.

A. Project: Extension of demonstration project

STATUS: Design is part of demonstration project; extension of project will depend on Water Contractors’ willingness to participate and availability of funding.

Involved Parties:

- Water Contractors

Immediate Action Three:

Pursue ISO certification.

A. Project: Pursue ISO 9000 and 14000 certification

ISO 9001 and 14001 will assure a program of constant improvement in the Water Agency’s quality of work and environmental management. Certification is proposed for late 2012.

STATUS: Ongoing.

Involved Parties:

- Internal activity

Immediate Action Four: *NEW!*

Update method of allocating water during shortages

A. Project: Update the Water Agency's existing annual Water Shortage Allocation and develop a new allocation model for summer months when diversions from the Russian River may be constrained due to reduced flows or water availability.

Many assumptions in the existing model should be updated. In addition, the Contractors have requested the Water Agency develop a methodology to apportion water during peak demand periods when their water demands exceed the Agency's allowable diversions.

STATUS: A consultant has been selected. Project anticipated to start in fall 2011, with completion in winter 2012.

Involved Parties:

- Water Agency; Contractors

Summary of Changes to 2010 Water Supply Strategies Action Plan (Includes New Actions Added to 2011 Plan)

Strategy 1 - Address Dry Creek Summer Flows

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Immediate Action 1 - Habitat enhancement, as required by the Biological Opinion, to increase capability of Dry Creek to accommodate summer flows while protecting coho and steelhead	A. Feasibility Study		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Demonstration Project		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	C. Development of success measures		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 2 - Reduce peak demands that affect Warm Springs Dam releases	A. New Reuse		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Groundwater Banking Feasibility Study		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	C. Retrofit/Conservation		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	D. Leak Detection				X	New project added to updated plan.
Immediate Action 3 - Study feasibility of bypass pipeline to convey water from Lake Sonoma to Russian River	A. Feasibility Study	X	X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 4 - Implement Dry Creek tributary restoration projects, as required by Biological Opinion, with goal of enhancing coho and steelhead habitat	A. Grape Creek Restoration Project	X				Completed construction and first-year monitoring. Ongoing monitoring for four more years.
	B. Grape and Wallace Creek Fish Passage Projects		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	C. Mill Creek Restoration Project			X		Project location changed to Crane Creek
Immediate Action 5 - Identify and secure federal, state, and grant funding for implementation of the Biological Opinion	A. Seek federal and state funding		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Proactively work with Water Contractors to ensure their timely assistance in funding efforts and report activities at WAC meetings					
NEW Near Term Action - Conduct engineering and water quality analysis for Dry Creek bypass pipeline (New Near Term Action 3)	A. Conduct analysis				X	New project added to updated plan.

Summary of Changes to 2010 Water Supply Strategies Action Plan (Includes New Actions Added to 2011 Plan)

Strategy 2 - Modify Operation of Russian River System

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes for New 2011 Action Plan
Immediate Action 1 - Modify Decision 1610 minimum instream flow requirements as required by Biological Opinion and make technical adjustments to existing water rights.	A. D1610 changes		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Demand analysis	X				Action completed. Not included in updated plan.
	C. Modeling/hydrologic index		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	D. Environmental Impact Report (EIR)		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	E. Submit Annual Interim Change Petitions		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 2 - Estuary Adaptive Management	A. Estuary adaptive management	X	X			Completed Final EIR. Monitoring & activities will continue.
Immediate Action 3 - Work with grape growers to support development and implementation of agricultural water conservation strategies	A. Pilot projects	X				Action completed and not contained in updated plan.
Immediate Action 4 (NEW Immediate Action 3) - Work with interested parties to form an independent science panel to evaluate existing data and develop a conceptual model regarding the hydrologic system upstream of the confluence of Dry Creek and the Russian River.	A. Formation of science panel		X			Updated project description. Ongoing activities to occur in upcoming year.
Immediate Action 5 (NEW Immediate Action 4) - Support enhanced weather forecasting for frost protection and irrigation by agriculture	A. Funding		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 6 (NEW Near Term Action 3) - Implement water management in Dry Creek per agreement with Dry Creek property owners	A. Variety of actions			X		Action moved to Near-Term Action 3.
Immediate Action 7 (NEW Immediate Action 5) - Enhance operations at Lake Mendocino to increase water supply	A. Corps operations		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Local Users		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 8 (NEW Immediate Action 6) - Prepare reports on Water Agency's water rights	A. Reports		X			Updated status and progress. Ongoing activities will occur in the upcoming year.
Immediate Action 9 (NEW Immediate Action 7) - Continue to monitor implementation of FERC Final Order & FERC Modeling/NEPA	A. Evaluate discrepancies between FERC Final Order and Modeling/CEQA/NEPA analyses		X			Updated project description and status. Ongoing activities to occur in upcoming year.

Summary of Changes to 2010 Water Supply Strategies Action Plan (Includes New Actions Added to 2011 Plan)

Strategy 3 - Evaluate Potential Climate Change Impacts on Water Supply & Flood Protection

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Immediate Action 1 - Initiate climate change modeling for Russian River and Sonoma Valley watersheds.	A. Develop model		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 2 - Support development of Hydrometeorology Test bed (HMT) for the Russian River basin	A. Support federal partners		X			Updated status and progress. Ongoing activities to occur in upcoming year.

Strategy 4 - Pursue Combined Water Supply & Flood Control Projections

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Identify projects within Water Agency Flood Control Zones that reduce flooding and increase groundwater recharge	A. Roadmapping		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Promote small-scale Sonoma Valley projects	X				Updated status and progress. Ongoing activities to occur in upcoming year.
	C. Seek funding (New Project B)		X			Updated status and progress. Ongoing activities to occur in upcoming year.

Strategy 5 - Work With Stakeholders to Promote Sound, Information-Based Water Supply Planning Programs

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Immediate Action 1 - Develop non-regulatory AB 3030/SB1938 management plans that emphasize local control. Emphasize development of diversified water supply "portfolios" for each contractor. Continue with Sonoma Valley program and initiate program in Santa Rosa Plain	A. Implement Sonoma Valley Groundwater Management Plan		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Santa Rosa Plain planning		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 2 - Pursue funding opportunities enhanced by developed management plans. Ranking for state funding enhanced if groundwater management plans are in place	A. Funding		X			Updated status and progress and funding received. Ongoing activities to occur in upcoming year.
Immediate Action 3 - Initiate discussions on form of collaborative agreement with Alexander Valley and Upper Russian River Valley growers	A. Collaboration with Russian River grape growers (see Strategy 2)		X			Updated project description, status and progress. Ongoing activities will occur in the upcoming year.
Immediate Action 4 (NEW Near Term Action 1) - Seek to form basis of collaboration with Dry Creek growers.	A. Dry Creek water users agreement (see Strategy 2)			X		Action moved to near-term action.
Immediate Action 5 (NEW Immediate Action 4) - Assist Sonoma County in responding to recent legislation (SBx7-6) requiring groundwater level monitoring in Bulletin 118 identified basins. Monitoring plans need to be developed by July 2011	A. CASGEM preliminary activities - program development		X			Updated project description, status and progress. Ongoing activities to occur in upcoming year.

Summary of Changes to 2010 Water Supply Strategies Action Plan (Includes New Actions Added to 2011 Plan)

Strategy 6 - Improve Transmission System Reliability

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Immediate Action 1 - In consultation with Water Contractors, develop plan to provide consistent funding for natural hazard and operational reliability capital projects	A. Local Hazard Mitigation Program Schematic Design/CEQA (Moved to New Immediate Action 7)		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Rogers Creek Fault Crossing Mitigation (New Project A)		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	C. Collector 3 and 5 Liquefaction Mitigation (New Project B)		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	D. New Projects Added to 2011 Plan: Flow Monitoring, Russian River Crossing, River Diversion System Liquefaction Mitigation, Mark West Creek Crossing, Collector 6 Mitigation, Cotati Reservoir 3 Recoat, and Petaluma cathodic protection.				X	New projects added to the 2011 Plan
Immediate Action 2 - Continue to pursue state and federal funding for natural hazard reliability projects	A. Seek Funding		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 3 - Work with Water Contractors to reduce peak demand on transmission system via conservation, groundwater banking, local supply, and recycled water	See Strategies 1, 4, 5, 8 and 9		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 4 - Continue research on natural filtration capacity of Russian River alluvial materials	A. Research on pathogen removal		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Research on Surface Water/Groundwater Interaction		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 5 - Continue planning new transmission system projects to increase reliability of existing system	A. Planning		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Near Term Action 2 (NEW Immediate Action 6) - Evaluate condition of Water Agency's transmission system, especially portions experiencing elevated velocities	A. Pilot-scale assessment study of Petaluma Aqueduct			X		Move from near term action to immediate action
	B. Leak detection proof of concept study				X	New project added.
Near Term Action 3 (NEW Immediate Action 7) - Five year update and renewal of Local Hazard Mitigation Plan	A. Update plan			X		Move from near term action to immediate action
Near Term Action 4 (NEW Immediate Action 8) - Create emergency response plan for Mirabel dam failure or damage	A. Prepare contingency plan			X		Move from near term action to immediate action
Immediate Action 9 - Update of emergency response plan	A. Update plan				X	New action added
Near Term Action 1 - Evaluate performance of collector wells	A. New project added to updated plan.				X	New action added

Summary of Changes to 2010 Water Supply Strategies Action Plan (Includes New Actions Added to 2011 Plan)

Strategy 7 - Take Advantage of Energy and Water Synergies

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Immediate Action 1 - Promote programs emphasizing water and energy efficiency of Water Agency's transmission system operations	A. ISO 9000 and 14000		X	X		Updated project description and moved to Strategy 9
	B. Reporting		X			Strategy 7 has been revised and updated
Immediate Action 2 - Develop and implement programs to increase Water Agency's renewable energy portfolio to achieve "Carbon Free Water"	A. Power and Water Resources Pooling Authority		X			In New Immediate Action 2
	B. Fuel Cells		X	X	X	Fuel cell exploration continuing with "Farms to Fuels" added as a separate action item to Immediate Action 4.
Immediate Action 3 - Pursue state and federal funding for energy efficiency and renewable energy projects	A. Pursue state and federal grants		X			Water Agency has received (or been a partner in coalitions that have received) several state and federal grants for clean energy projects.
NEW Immediate Action 1 - Implement Water Agency's new Energy Policy	A. (1) Implement Farms to Fuels project (2) Obtain rights to Warm Springs Dam hydropower and Sonoma County landfill (3) Exploration of other locally available renewable energy				X	New Immediate Action 1. Includes Farms to Fuel; rights to claim hydropower and landfill energy in energy portfolio; exploration of other local renewables; energy efficiency project.
	B. Develop & implement Water Agency energy efficiency projects				X	
NEW Immediate Action 2 - Development of projects with local and regional significance	A. (1) Conduct feasibility study of Community Choice Aggregation and work with local partners (2) Implement Renewable Energy Secure Communities (RESCO) project to develop (3) Assist Water Contractors, who are interested, in becoming PWRPA members to obtain less expensive renewable power				X	New Immediate Action 2. Includes CCA and implementation of RESCO Grant.
	B. Emissions reporting			X		Updated status and progress and moved item to different immediate action.
Near Term Action 1 - Pursue revenue opportunities associated with renewable energy projects	A. Register renewable energy credits with Western Renewable Energy Generation Information System (WREGIS)		X	X		Action Item moved from "near term" to "immediate."
	B. Solar - Sonoma County Airport		X	X		Action Item moved from "near term" to "immediate."

Summary of Changes to 2010 Water Supply Strategies Action Plan (Includes New Actions Added to 2011 Plan)

Strategy 8 - Implement Integrated Water Management

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Immediate Action 1 - Perform analyses required by Urban Water Management Planning Act to develop regional and local supply, conservation / demand management, and recycled water projects and programs to meet reasonable future needs of Water Agency customers	A. Develop water and supply projections	X				Action completed and not contained in updated plan.
Immediate Action 2 (NEW Immediate Action 1) - Conduct long-term financial analysis to support evaluation and development of water supply, conservation, demand management, and recycled water projects and programs	A. Financial planning		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 3 (NEW Immediate Action 2) - Develop countywide guidance manual and support the development of individual WSD standards by each land use jurisdiction in Sonoma County, with the goal of managing stormwater quantity and quality and reducing potable water required by new development. Guidance manual will also partially satisfy requirements of stormwater permit jointly held by Water Agency, Sonoma County, and Santa Rosa	A. Countywide manual		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Local jurisdiction plans		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 4 (NEW Immediate Action 3) - Consult with Water Contractors to evaluate feasibility of base demand system instead of continued peak summer demand system	A. Assess feasibility		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Near Term Action 1 (NEW Immediate Action 4) - Evaluate alternative revenue models such as seasonal rates and fixed versus variable costs	A. Rate study			X		Move from near term action to immediate action
Near Term Action 2 (NEW Immediate Action 5) - Compare actual gross demand, conservation and source water use with the UWMP projections to ensure projections represent actual conditions	A. Monitor gross water demands			X		Move from near term action to immediate action
NEW Immediate Action 6 - Work with water contractors to evaluate local and sub-regional projects that could be combined with regional Water Agency projects to increase overall water supply reliability in the most cost-effective manner	A. Conduct assessment of local and sub-regional projects				X	New action added

Summary of Changes to 2010 Water Supply Strategies Action Plan (Includes New Actions Added to 2011 Plan)

Strategy 9 - Overcome Organizational Fragmentation to Promote Efficiency of Water System Operations & Planning

2010 Plan Immediate Actions	Projects	Completed	Ongoing	Moved	New	Changes For New 2011 Action Plan
Immediate Action 1 - Develop data management system "Collaboration Platform" in partnership with IBM that provides operational data of Water Agency's water supply and transmission system in addition to Water Contractors' systems	A. Demonstration project - collaboration platform		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	B. Metering		X			Updated status and progress. Ongoing activities to occur in upcoming year.
	C. Integrated weather forecasting		X			Updated status and progress. Ongoing activities to occur in upcoming year.
Immediate Action 2 - Extend demonstration project including AMR to other Water Contractors	A. Extension of demonstration project		X			Updated status and progress. Ongoing activities to occur in upcoming year.
NEW Immediate Action 3 - Pursue ISO 9000 and 14000 certification (moved from Strategy 7, Immediate Action 1, Project A)	A. Obtain ISO certification			X		Updated and moved from Strategy 7
NEW Immediate Action 4 - Update method of allocating water during shortages	A. Update Water Agency's existing annual water shortage allocation and develop a new allocation model				X	New activity

10 Year Summary of Planned Water Supply & Reliability Projects

Entity	Project	Status	Initiated	Estimated Completion	Water Supply?	Reliability?	Notes	Potential Constraints
Water Agency	South Transmission Section 1 (Cotati to Ely)		2020	2022				CEQA and Financial
Water Agency	South Transmission Section 2 (Ely to Kastania)		2020	2022				CEQA and Financial
Water Agency	Kawana – Ralphine-Sonoma BST Pipeline		2023	2025				CEQA and Financial
Water Agency	Petition to Increase Annual Diversion Limit		2020	2027				CEQA
Water Agency	Mirabel West Wells		2028	2030				CEQA and Financial
Rohnert Park	Groundwater Wells Replacement and Upgrade		2013	2035				Funding
Rohnert Park	Groundwater Banking		2011	2020				Feasibility
Rohnert Park	Recycled Water System Expansion		2012	2030				Timing of Development
Windsor	Off River Wells Water Supply Phase 1	Feasibility	2014	2016	Yes	Yes		Funding
Windsor	Off River Wells Water Supply Phase 2	Conceptual	2014	2020	Yes	Yes		Funding
Windsor	Recycled Water Expansion	Conceptual	2011	2020	Yes	Yes		Funding
Santa Rosa	Phase 1 West Recycled Water Project	Feasibility	2020	2025	Yes			Financial
North Marin	Recycled Water Expansion North & South	Design/Construction	2011	2015	Yes	Yes		Financing
North Marin	Recycled Water Expansion Central	Feasibility	2015	2025	Yes	Yes		Financing
North Marin	Aqueduct Energy Efficiency Project	Design/Construction	2011	2015		Yes		Financing/CalTrans
North Marin	Stafford Lake Solar Project	Design/Construction	2010	2012		Yes		CSI Reinstatement
North Marin	Novato Local water Supply Enhancement Study	Conceptual	2012	2014	Yes	Yes		TBD
Cotati	Well 4	Conceptual	2011	2015	Yes	Yes		None
Cotati	Thomas Page Recycled Water Project	Design/Construction	2011	2013		Yes		None
Cotati	Sunflower Park Recycled Water Project	Conceptual	2012	2014		Yes		None
Cotati	Groundwater Banking Project	Feasibility	2010	2015		Yes		Feasibility
Marin Municipal	Peacock Gap Recycled Water Project		2009	2018				CEQA and Financial
Marin Municipal	33 San Pablo Recycled Water Project	Design/Construction	2008	2012				None
Marin Municipal	Nicasio to Kent Pipeline		2011	2019	Yes			CEQA and Financial
Petaluma	Recycled Water Area A			2015				None listed
Petaluma	Recycled Water Area C			TBD				None listed
Petaluma	Recycled Water Area E			TBD				None listed
Petaluma	Recycled Water Area G			TBD				None listed
City of Sonoma	SDC Conjunctive Use		2011	2013				Agreement
City of Sonoma	Groundwater Well #8		2011	2014	Yes	Yes		Siting
City of Sonoma	Groundwater Banking		2011	2020	Yes	Yes		Feasibility
City of Sonoma	SCWA Russian River Water Rights Diversion Increase		2015	2035	Yes	Yes		Environ.
City of Sonoma	Groundwater Well #9 (replacement of existing well)		2014	2018		Yes		
City of Sonoma	Groundwater Well #10 (replacement of existing well)		2016	2020		Yes		
City of Sonoma	Sonoma Valley Recycled Water Project		2016	2025	Yes	Yes		
VOMWD	SDC Conjunctive Use		2011	2013		Yes		Agreement
VOMWD	Groundwater Banking		2011	2020		Yes		Feasibility
VOMWD	Recycled Water		2011	2035	Yes			Feasibility
VOMWD	SCWA Russian River Water Rights Diversion Increase		2015	2035	Yes			Environ.

2011 Water Supply Strategy Action Plan - Summary of Immediate Actions

Strategy	Action Level	Action	Project	Description	Funding Source		Potential Benefits
					Water Transmission (Footnote 1)	Other (Footnote 2)	
One	Immediate	One	A	Geomorphology Feasibility Study		✓	Comply with Biological Opinion, improve habitat for ESA-listed salmonids, and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	One	B	Habitat Enhancement Demonstration Project (Mile 1)		✓	Comply with Biological Opinion, improve habitat for ESA-listed salmonids, and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	One	C	Development of success measures		✓	Developing agreed-upon success criteria upfront could eliminate costly disagreements later in the project and will enable the Water Agency, NMFS and CDFG to judge success consistently throughout the project.
	Immediate	Two	A	New reuse: Windsor Recycled Water Project		✓	Reduce demand for Russian River supplies.
	Immediate	Two	A	New reuse: Sonoma Valley Recycled Water Project		✓	Reduce demand for Russian River & groundwater, reduce potential for saline water intrusion of groundwater basin.
	Immediate	Two	B	Ground Water Banking Feasibility Study	✓		Increase reliability of water supplies during drought, natural hazard events, and seasonal constraints of Russian River supplies. Help reduce groundwater level declines in basins and associated water quality impacts from overpumping (e.g., saline water intrusion).
	Immediate	Two	C	Retrofit and Conservation		✓	Direct install programs in each of the Sanitation Districts and Zones replaces plumbing fixtures and appliances with water efficient units, reducing potable water demand.
	Immediate	Two	D	Leak Detection	✓		Improved leak detection capabilities by the Agency and its water contractors will improve water conservation and reduce non-revenue water losses.
	Immediate	Three	A	Grape Creek (Habitat) Restoration Project		✓	Comply with Biological Opinion, improve habitat for ESA-listed salmonids, and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	Three	B	Grape and Wallace Creek Fish Passage Projects		✓	Comply with Biological Opinion, improve habitat for ESA-listed salmonids, and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	Three	C	Crane Creek Habitat Restoration Project		✓	Comply with Biological Opinion, improve habitat for ESA-listed salmonids, and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	Four	A	Seek federal and state funding			Revenues received from federal and state sources will lessen impact on ratepayers.
	Immediate	Four	B	Proactively work with Water Contractors on funding			Revenues received from federal and state sources will lessen impact on ratepayers.
Two	Immediate	One	A	D1610 Change Petition	✓	✓	Comply with Biological Opinion, improve habitat for ESA-listed salmonids, improve regulatory certainty and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	One	B	Modeling and development of new hydrologic index	✓	✓	Improve analysis of water supply.
	Immediate	One	C	Fish Flow Project Environmental Impact Report	✓	✓	Comply with Biological Opinion, improve habitat for ESA-listed salmonids, improve regulatory certainty and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	One	D	Annual Interim Flow Change Petition	✓	✓	listed salmonids, improve regulatory certainty and secure existing water supplies. Compliance with the Biological Opinion is essential if Russian River supplies are to be utilized to help meet future water demands of the Agency's water customers.
	Immediate	Two	A	Estuary Adaptive Management	✓		Comply with Biological Opinion, improve habitat for ESA-listed salmonids, obtain permits for continued breaching program.
	Immediate	Three	A	Work with interested parties to support the development of independent science review panel		✓	Improved scientific understanding of river system will lead to improved management, operation and policy decisions.
	Immediate	Four	A	Enhanced weather forecast/frost protection and irrigation		✓	Better weather information to improve agricultural water use efficiency will benefit overall water supply and improve conditions for listed salmonid species. In addition, more accurate weather forecasts will help the Agency manage river flows during frost events or heat spells. Water contractors will be able to better plan for heat waves.
	Immediate	Five	A	Enhance operation of Lake Mendocino		✓	Increase water storage/reliability of water supply.

Strategy	Action Level	Action	Project	Description	Funding Source		Potential Benefits
					Water Transmission (Footnote 1)	Other (Footnote 2)	
	Immediate	Five	B	Increased coordination with local users		✓	Increased coordination with other Russian River water users will benefit river system operations.
	Immediate	Six	A	Prepare reports on Water Agency rights		✓	Increase reliability of water supply.
	Immediate	Seven	A	Monitor FERC Final Order implementation	✓	✓	Reconciling differences in FERC's final order and modeling assumptions could reduce pressures on Lake Mendocino in low water years.
Three	Immediate	One	A	Climate change modeling for Russian River and Sonoma Valley watersheds	✓	✓	Improved analysis leads to more informed regional water supply planning and more secure supplies.
	Immediate	Two	A	Hydrometeorology Test Bed - Russian River Basin		✓	Improved analysis leads to more informed regional water supply planning and more secure supplies.
Four	Immediate	One	A	Identify flood control /groundwater recharge projects		✓	Developing a plan will help identify strategic opportunities for projects to improve both flood control and water supply. Multi-benefit projects reduce individual participant costs and increase likelihood of outside funding.
	Immediate	One	B	Seek funding for flood control/groundwater recharge projects	n/a		Obtain state funding for small and large-scale project to enhance flood control and improve water supply.
Five	Immediate	One	A	Implement Sonoma Valley Groundwater Management Plan	✓		Increase the reliability and sustainability of water supplies in the Sonoma Valley through collaborative management by community based stakeholder process. Successful local management provides model for other regions and reduces possible future outside regulation. Increase opportunities to obtain state funding for water projects in the Sonoma Valley. See Footnote 3.
	Immediate	One	B	Santa Rosa Plain Groundwater Study & Management Plan	✓		Increase the reliability and sustainability of water supplies in the Santa Rosa Plain through collaborative management by community based stakeholder process. Successful local management reduces possible future outside regulation. Increase opportunities to obtain state funding for water projects in the Santa Rosa Plain.
	Immediate	Two	A	Pursue funding for GW management plans	n/a	n/a	Obtain state funding for water supply projects.
	Immediate	Three	A	Work with interested parties to support the development of independent science review panel		✓	See Strategy 2, Immediate Action 3, Project A
	Immediate	Four	A	California Statewide Groundwater Elevation Monitoring Program (SBx7-6) -- Program development	✓	✓	Without groundwater monitoring plans, local jurisdictions could be ineligible for state grant funds.
Six	Immediate	One	A through K	Operational and natural hazard reliability projects: Rogers Creek Fault crossing mitigation, Collector 3 & 5, liquefaction mitigation, Isolation valves, flow monitoring, Russian River crossing, Russian River diversion system liquefaction mitigation, Mark West Creek crossing, Collector 6 liquefaction mitigation, Cotati Reservoir 3 recoat, and Petaluma Aquaduct cathodic protection	✓		Improve the resiliency of water transmission system facilities against seismic events and operational risks to improve reliability of water supply.
	Immediate	Two	A	Pursue state/federal funding for natural hazard mitigation	n/a	n/a	Obtain state and federal funding for projects that will improve the reliability of water transmission system facilities.
	Immediate	Three	A	Reduction of peak demand (conservation, GW banking...)			See other projects under strategies 1,5,6,9,and 10.
	Immediate	Four	A	Evaluation of pathogen removal	✓		Improve understanding of the natural system utilized by the Agency's facilities to remove pathogens, resulting in safe and reliable water supply.
	Immediate	Four	B	Evaluation of surface water/groundwater interaction	✓		Improve understanding of how the Russian River and underlying groundwater interact to influence water yield and quality produced by Agency's facilities.
	Immediate	Five	A	Water transmission system planning/reliability	same as Strategy Nine 1.A		See strategy 9.
	Immediate	Six	A	Pilot-scale condition assessment study of Petaluma Aqueduct	✓		Improve the resiliency of water transmission system facilities against seismic events and operational risks to improve reliability of water supply.
	Immediate	Six	B	Leak Detection proof of concept study	✓		See Strategy 1, Immediate action 2, project D
	Immediate	Seven	A	Update local hazard mitigation plan	✓		Planning document to develop priorities for natural hazard projects and to provide documentation to FEMA for funding opportunities.
	Immediate	Eight	A	Prepare Mirabel dam contingency plan	✓		Improve the resiliency of water transmission system facilities against operational risks to improve reliability of water supply.
	Immediate	Nine	A	Update Emergency Response Plan	✓		Improve the resiliency of water transmission system facilities against seismic events and operational risks to improve reliability of water supply.
	Immediate	Nine	B	Increase emergency preparedness drills and exercises to improve readiness			Improve the resiliency of water transmission system facilities against seismic events and operational risks to improve reliability of water supply.
Seven	Immediate	One	A	Develop and implement Water Agency renewable energy generation projects		✓	These energy projects focus on the reducing GHG emissions and meet the "carbon free water goal. In addition these projects can reduce energy costs that affect water rates.
	Immediate	One	B	Develop and implement Water Agency energy efficiency projects		✓	These energy projects focus on the reducing GHG emissions and meet the "carbon free water goal. In addition these projects can reduce energy costs that affect water rates.

Strategy	Action Level	Action	Project	Description	Funding Source		Potential Benefits
					Water Transmission (Footnote 1)	Other (Footnote 2)	
	Immediate	Two	A	Develop and participate in projects of regional benefit		✓	These energy projects focus on the reducing GHG emissions and promote local economic benefits.
	Immediate	Two	B	Emissions reporting		✓	Through this program the Agency will have independent verification of its carbon emission and documentation of "Carbon Free Water".
	Immediate	Two	C	Register renewable energy credits		✓	These energy projects focus on the reducing GHG emissions and promote local economic benefits.
	Immediate	Two	D	Solar		✓	These energy projects focus on the reducing GHG emissions and promote local economic benefits.
	Immediate	Three	A	Pursue state and federal funding opportunities	n/a		Offset the cost of energy efficiency and renewable projects.
Eight	Immediate	One	A	Conduct long-term financial analysis to support evaluation and development of water supply, conservation, demand management, and recycled water projects and programs.	✓		Develop portfolio of Agency projects, in conjunction with Water Contractors and utilizing Agency's long-term financial model, to provide a reliable water supply to meet reasonable documented future demands by the water contractors in an affordable manner. Results will be utilized in Immediate Action 8 where regional, subregional, and local projects will be evaluated to determine the most cost-effective overall approach to meeting future water supply.
	Immediate	Two	A & B	Develop countywide guidance manual and support the development of individual Water Smart Development (WSD) standards by each land use jurisdiction in Sonoma County, with the goal of managing stormwater quantity and quality and reducing potable water required by new development.		✓	Comply with stormwater permit requirements, and improve water use efficiency and management for new development projects to increase the reliability of Russian River and groundwater supplies. This program will reduce impacts of development and make existing supplies go further. Successful local management can avoid State regulation.
	Immediate	Three	A	Assess feasibility of base demand system	✓		Reducing peak demand could reduce need for expensive infrastructure additions and lessen wear and tear on existing infrastructure.
	Immediate	Four	A	Evaluate alternative revenue models such as seasonal rates and fixed versus variable costs.	✓		A potential benefit could be increased rate stability to support capital projects and water conservation programs resulting in decreased water deliveries.
	Immediate	Five	A	Compare actual gross demand, conservation, and source of water use (per the information completed by Immediate Action 6 Strategy 2) with the UWMP projection to ensure projections represent actual conditions.	✓		Improved water supply planning through proactive monitoring trends of water demands.
	Immediate	Six	A	Work with water contractors to evaluate local and sub-regional projects that could be combined with regional Water Agency projects to increase overall water supply reliability in the most cost-effective manner.	✓		Develop portfolio of projects, in conjunction with Water Contractors, to provide a reliable water supply to meet reasonable documented future demands by the water contractors in an affordable manner. Regional and local projects must be planned and implemented in a coordinated and transparent manner.
Nine	Immediate	One	A	Develop data management system "Collaboration Platform" in partnership with IBM that provides operational data of Water Agency's water supply and transmission system in addition to Water Contractors' systems.	✓	✓	May achieve water, energy, and cost savings. Transparent information sharing to improve regional coordination of water supply operations and increased water, energy and cost efficiencies. This platform can also be expanded for use in emergencies as a support tool to facilitate operations and aid support (manpower and equipment) between various systems.
	Immediate	Two	B	Extend demonstration project including AMR to other Water Contractors.	✓		May achieve water, energy, and cost savings. In combination with Collaboration Platform, AMR will provide real-time information regarding actual water demands, allowing for improved system operations, regional coordination, and planning.
	Immediate	Three	B	Pursue ISO 9000 and 14000 certification.	✓		Improved business practices required by the ISO certification program will lead to continued efficiencies in business operations.
	Immediate	Four	A	Update method of allocating water during shortages	✓		Develop a tool to support water management decisions during periods of water shortage.